STRUCTURE OF THE CEPHALIC END OF *ASCAROPHIS MEXICANA* (NEMATODA: CYSTIDICOLIDAE), AS REVEALED BY SEMFrantišek Moravec¹ and David González-Solís²¹Institute of Parasitology, Biology Centre, Academy of Sciences of the Czech Republic, Branišovská 31, 370 05 České Budějovice, Czech Republic;²Parasitología del Necton, El Colegio de la Frontera Sur (ECOSUR), Unidad Chetumal, Avenida Centenario Km. 5.5, C.P. 77900, A.P. 424, Chetumal, Quintana Roo, Mexico

Abstract. Scanning electron microscopy of the cystidicolid nematode *Ascarophis mexicana* Moravec, Salgado-Maldonado et Vivas-Rodríguez, 1995 enabled the first detailed study of its cephalic structure. In contrast to most *Ascarophis* species, its pseudolabia are highly reduced and sublabia are unlobed and weakly developed. *Similascarophis* is considered a synonym of *Ascarophis*, to which two its species are transferred as *A. maulensis* (Muñoz, González et George-Nascimento, 2004) comb. n. and *A. chilensis* (Muñoz, González et George-Nascimento, 2004) comb. n.

Moravec et al. (1995) described the cystidicolid nematode *Ascarophis mexicana* Moravec, Salgado-Maldonado et Vivas-Rodríguez, 1995 from the stomach of the marine serranid fishes (groupers) *Epinephelus morio* (Valenciennes) and *E. adscensionis* (Osbeck) from the southern Gulf of Mexico. Later it was reported as a common parasite of the red grouper *E. morio* off the Yucatan Peninsula, southeastern Mexico (Moravec et al. 1997). However, since the original species description was based on a few available specimens only, scanning electron microscopy (SEM) could not be used to examine their detailed cephalic structure, which is important for the taxonomy of this nematode group (e.g., Margolis 1977, Appy and Anderson 1982, Ko 1986).

An additional material of *A. mexicana* obtained from *E. morio* from Chuburna, Yucatan, in 1995 made it possible to study the cephalic end of this species by SEM (for methods see, e.g., Moravec et al. 2006). Deirids were found to be non-bifurcated (Fig. 1B). In contrast to the type species of *Ascarophis* van Beneden, 1871, *A. morrhuae* van Beneden, 1871, where the pseudolabia are relatively large and the sublabia are bilobed and well developed (Ko 1986), the pseudolabia of *A. mexicana* are markedly reduced, with large pseudolabial terminal projections, and the sublabia are weakly developed and not bilobed (Fig. 2 A,C). The cephalic papillae are unusually elongate and the amphids are small (Fig. 2 A). The striation of cuticle starts just below the cephalic extremity. The male tail is spirally coiled, with a distinct area rugosa (Fig. 2 B). The female tail has a transversely striated cuticle up to the level of distinct phasmids situated near the tail tip (Fig. 2 D).

Muñoz et al. (2004) established a separate genus *Similascarophis* Muñoz, González et George-Nascimento, 2004 to accommodate their two new and one undetermined species of

Fig. 1. *Ascarophis mexicana* Moravec, Salgado-Maldonado et Vivas-Rodríguez, 1995, scanning electron micrographs. **A** – striation of cuticle at middle of body; **B** – deirid. Scale bars: A = 5 µm; B = 1 µm.

Ascarophis-like nematodes with highly reduced pseudolabia, collected off the Chilean coast. The present study shows that *Ascarophis mexicana* has a similar cephalic structure and the same was found in *Ascarophis ayalai* Caballero, 1975 and *A. valentina* Ferrer, Aznar, Balbuena, Kostadinova, Raga et Moravec, 2005 (see González-Solís et al. 2002, Ferrer et al. 2005).

However, several cystidicolid genera including *Similascarophis* have been based on details in the cephalic structures visible only with the aid of SEM (Margolis 1977, Appy and Anderson 1982, Muñoz et al. 2004) and it will be evident whether or not these tiny features are of generic importance only as more cystidicolids are described using SEM and comparative molecular data become available (Moravec et al. 2002, Ferrer et al. 2005, Moravec and Klimpel 2007). Therefore, for the time being, *A. ayalai* and *A. mexicana* are retained in *Ascarophis*, to which the two species described in *Similascarophis* are transferred as *Ascarophis maulensis* (Muñoz, González et George-Nascimento, 2004) comb. n. and *A. chilensis* (Muñoz, González et George-Nascimento, 2004) comb. n.; *Similascarophis* is suppressed as a junior synonym of *Ascarophis*.

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Fig. 2. *Ascarophis mexicana* Moravec, Salgado-Maldonado et Vivas-Rodríguez, 1995, scanning electron micrographs. **A** – cephalic end, apical view (arrowheads indicate sublabia); **B** – caudal end of male, ventrolateral view; **C** – cephalic end, sublateral view; **D** – tail of female, ventral view. Abbreviations: a – amphid; b – cephalic papilla; o – anal opening; p – pseudolabium; r – phasmid; s – spicule; t – pseudolabial protrusion; v – area rugosa. Scale bar: A = 1 µm.

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